

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-38. (cancelled)

39. (currently amended) A biosensor device, comprising:

a patterned substrate having hydrophilic and hydrophobic areas; and

at least one reporter molecule selected from the group consisting of a conjugated polyelectrolyte, copolymers or homopolymers of thiophene, pyrrole, aniline, furan, phenylene, vinylene and derivatives thereof, a property of ~~which is~~ said reporter molecule being detectable, said reporter molecule being capable of direct interaction with a biomolecule, whereby said interaction will cause a change in said detectable property, said reporter molecule being non-covalently bound to selected ones of said hydrophilic and hydrophobic areas on said patterned substrate.

40. (cancelled)

41. (currently amended) The biosensor device as claimed in claim [[40]] 39, wherein said conjugated polyelectrolyte is fluorescent.

42. (previously presented) The biosensor device as claimed in claim 39, wherein said reporter molecule is capable of interaction with a biomolecule, and wherein said interaction will cause a change in said detectable property.

43. (previously presented) The biosensor device as claimed in claim 39, wherein said substrate comprises silicon wafers, glass, glass slides, glass beads, glass wafers, silicon rubber, polystyrene, polyethylene, fluorinated hydrocarbon polymers, silica gel beads, gold, indium tin oxide-coated materials, filter paper made from nylon, cellulose or nitrocellulose, standard copy paper or variants thereof or separation media or other chromatographic media.

44. (previously presented) The biosensor device as claimed in claim 39, wherein selected ones of said areas further comprise any of one or more receptor molecules and one or more target analytes alone or in combination, and forming a complex with said reporter molecule.

45. (previously presented) The biosensor device as claimed in claim 39, wherein receptor molecules are selected from the group consisting of peptides, carbohydrates, nucleic acids, lipids, pharmaceuticals, antigens, antibodies, proteins, organic polymers or combination of these molecules capable of interacting with said target analyte.

46. (previously presented) The biosensor device as claimed in claim 44, wherein said target analytes are selected from the group consisting of cells, viruses, bacteria, spores, microorganisms, peptides, carbohydrates, nucleic acids, lipids, pharmaceuticals, antigens, antibodies, proteins, enzymes, toxins, organic polymers or combinations of these molecules that are capable of interacting with said receptors or reporter/receptor complexes.

47. (previously presented) A biosensor apparatus, comprising a biosensor device as claimed in claim 39, said biosensor device being located in a receptacle, suitably a flow cell, the apparatus further comprising a detector configured for detecting said detectable property.

48. (previously presented) A biosensor apparatus, comprising a biosensor device as claimed in claim 39, said biosensor device being located in a receptacle, suitably a flow

cell, the apparatus further comprising a detector configured for detecting said detectable property.

49. (previously presented) The biosensor device as claimed in claim 39, wherein the non-covalent bonding is hydrogen bonding, electrostatic or non-polar interactions between the reporter molecule and the hydrophilic or hydrophobic areas.

50. (previously presented) The biosensor device as claimed in claim 39, wherein the reporter molecule is a conjugated polyelectrolyte with a minimum of 5 mers.

51. (previously presented) The biosensor device as claimed in claim 39, wherein the biosensor device includes arrays or parallel lines of different, similar or equal biosensor spots.

52. (currently amended) A biosensor device, comprising:  
a patterned substrate having hydrophilic and hydrophobic areas; and

at least one reporter molecule, a property of which is detectable, said reporter molecule being a fluorescent conjugated polyelectrolyte the fluorescence of which is detectable, and said reporter molecule being capable of interaction with a biomolecule, whereby said interaction will cause a change in the fluorescence, that is said reporter molecule non-covalently bound

to selected ones of said hydrophilic and hydrophobic areas on said patterned substrate.

53. (previously presented) The biosensor device as claimed in claim 52, wherein said conjugated polyelectrolyte is fluorescent.

54. (previously presented) The biosensor device as claimed in claim 39, wherein the conjugated polyelectrolyte has a minimum of 5 mers.

55. (previously presented) The biosensor device as claimed in claim 39, wherein said conjugated polyelectrolyte is capable of interaction with a biomolecule, and wherein said interaction will cause a change in said detectable property.